

PATENT ABSTRACTS OF JAPAN

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(54) MANUFACTURE OF RARE-EARTH PERMANENT MAGNET

(57)Abstract:

PURPOSE: To prevent the mixture of nitrogen in fine power during a pulverizing process performed in an environment containing oxygen at a low concentration by preparing a raw material mixture by mixing the fine powder with a solvent in an Ar gas flow containing oxygen at a concentration lower than a specific level and sintering the molded body of the mixture after removing the solvent from the molded body.

CONSTITUTION: Fine powder is obtained by pulverizing coarse particles of a raw material for rare-earth permanent magnet in a jet mill while an Ar gas containing oxygen at a concentration of ≤ 30 ppm is supplied to the mill.

The fine powder is directly recovered in a container filled up with a solvent composed of mineral oil, synthetic oil, vegetable oil, etc., in an Ar gas atmosphere containing oxygen at a concentration of ≤ 30 ppm. Then, after obtained a raw material mixture by mixing the fine powder with the solvent, a fixed amount of the mixture is directly thrown in a mold cavity after weighing and a molded body is formed by press-molding the mixture with a punch 1 and die 2 while an oriented magnetic field is impressed upon a coil 4 for oriented magnetic field. Thereafter, a sintered body is obtained by sintering the molded body after removing the solvent from molded body. Therefore, the mixture of nitrogen in the fine powder during the pulverizing process performed at a low oxygen concentration can be prevented.

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